



# Macro Economic Outlook 2023

## Highlights



### Falling investments

→ page 17

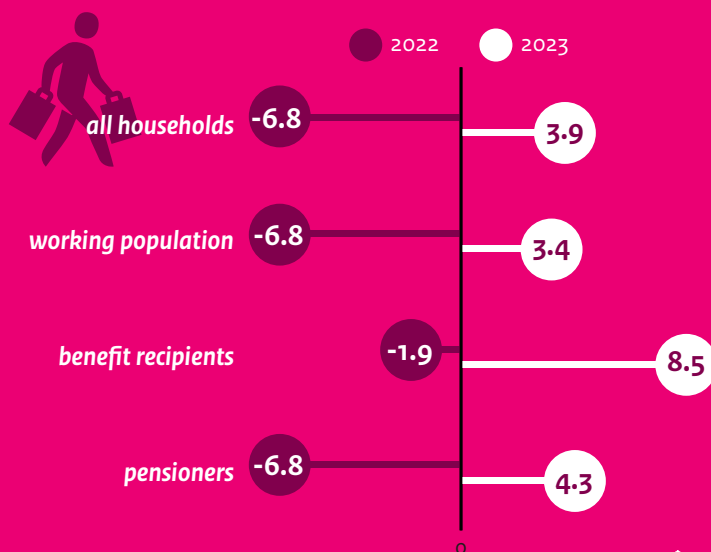


### Energy and inflation uncertainty

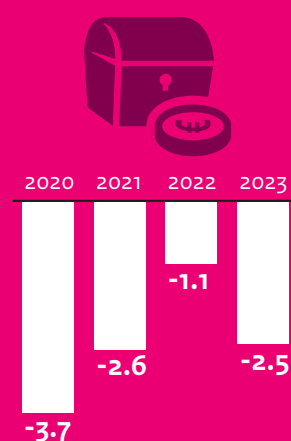
→ page 10

**The new policy in the Budget Memorandum leads to more purchasing power and higher economic growth next year, at the expense of the government balance**

Development of static purchasing power,  
median per income source in %



Government balance  
in % of GDP



The number of people living below the poverty line decreases in 2023, as does the number of people at risk of payment difficulties → page 12



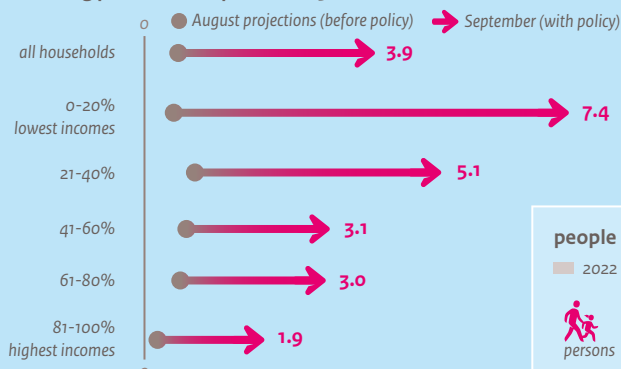
CPB Projections

September 2022

# CPB figures 'Prinsjesdag' 2022

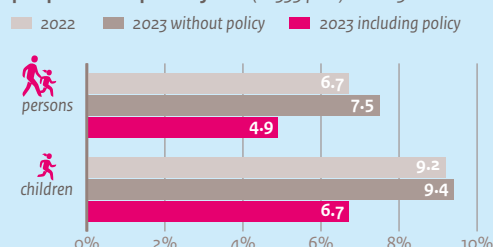
The strong recovery after the Covid crisis is going into reverse due to rising inflation. Policy will lead to an improvement in purchasing power and economic growth, at the expense of the budget balance

## purchasing power development 2023 median in %



← Purchasing power decreases this year by an average of 6.8%. New policy in the Budget Memorandum will lead to a stronger recovery in 2023 than was expected in August. The measures are nevertheless largely temporary

## people below poverty line (€1533 p.m.) in 2023



↗ In addition to purchasing power, the development in the number of people below the poverty line is also shown. At the request of the House of Representatives, CPB has also conducted a new stress test on the cost of living

## cost of living stress test



**540.000** households may be unable to pay their monthly expenses in 2023 due to high energy prices ...

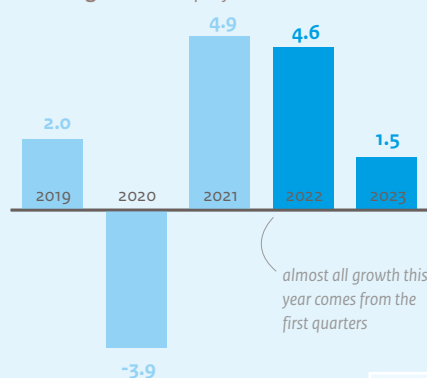


... plus a further **300.000** households in a dark scenario



in August, without a dark scenario, **1.000.000** households were considered to be at risk

## economic growth in % per year



↑ Economic growth falls. GDP grows next year due to higher government spending, exports and higher expenditure by households

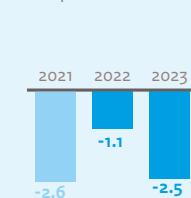
## inflation in %



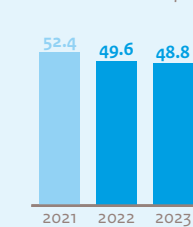
← If there is no further escalation in the energy crisis, inflation falls in 2023

↓ The public finances benefit from profit tax and higher revenues from natural gas sales. Additional money for purchasing power leads to a bigger deficit in 2023

## budget balance in % of GDP



## national debt % of GDP



Insight into the consequences of a different energy price development → uncertainty, pagina 10



# 1 The economy in 2022 and 2023

The decisions adopted in the Budget Memorandum lead to an improvement in purchasing power and the poverty projection compared to the August projections (cMEV), at the expense of the government balance. Household consumption consequently increases next year, which also leads to higher economic growth. The EMU balance turns out 1.4% of GDP lower than in the cMEV. The lowest income groups see the biggest improvement in purchasing power, so fewer people fall into poverty than was projected in the cMEV. The poverty indicator, which rises in 2022, falls back to 4.9% of the population in 2023. An updated “Cost of living” stress test shows that in the baseline projections 540,000 households are at risk of payment difficulties if their energy usage is unchanged. In a scenario with higher gas prices, the number rises to 860,000 households.

On the basis of the market expectations at the end of July, inflation (CPI) falls from 9.9% this year to 2.6% next year. Although inflation spreads somewhat to other components, such as food, it continues to be driven first and foremost by energy prices, particularly gas prices. This projection is based on market expectations for the gas price. In those expectations the price falls slightly next year but still remains well above the level of recent years.<sup>1</sup> The projected inflation in 2023 is lower than in the cMEV due to the cuts in energy tax and fuel duties. The trend in the gas price naturally remains very uncertain. For that reason, uncertainty variants with a lower and a higher gas price have been included in these projections. In the lower gas price variant, inflation amounts to 0.7% in 2023. With a higher gas price, inflation this year is significantly higher and amounts to 5.5% in 2023 (see section entitled ‘Gas price uncertainty variants’ and Summary Table 1.1).

**Table 1.1 Baseline projections and variants, 2021-2023**

	2021	2022	2023	2022	2023	2022	2023
	baseline projections			low variant		high variant	
National consumer price index (CPI, %)	2.7	9.9	2.6	9.4	0.7	11.7	5.5
Gross domestic product (GDP, economic growth, %)	4.9	4.6	1.5	4.6	1.9	4.5	0.6
Purchasing power; static; median all households (%)	0.3	-6.8	3.9	-6.4	5.8	-8.2	1.1
People in poverty (level in %) (a)	5.7	6.7	4.9	6.5	4.3	7.2	5.7
Unemployment rate (% of the labour force)	4.2	3.4	3.9	3.4	3.8	3.5	4.0

(a) The ratio of the number of persons in households below the poverty line to the total number of persons. The modest-but-adequate criterion used by the Netherlands Institute for Social Research (SCP) has been adopted as the poverty line.

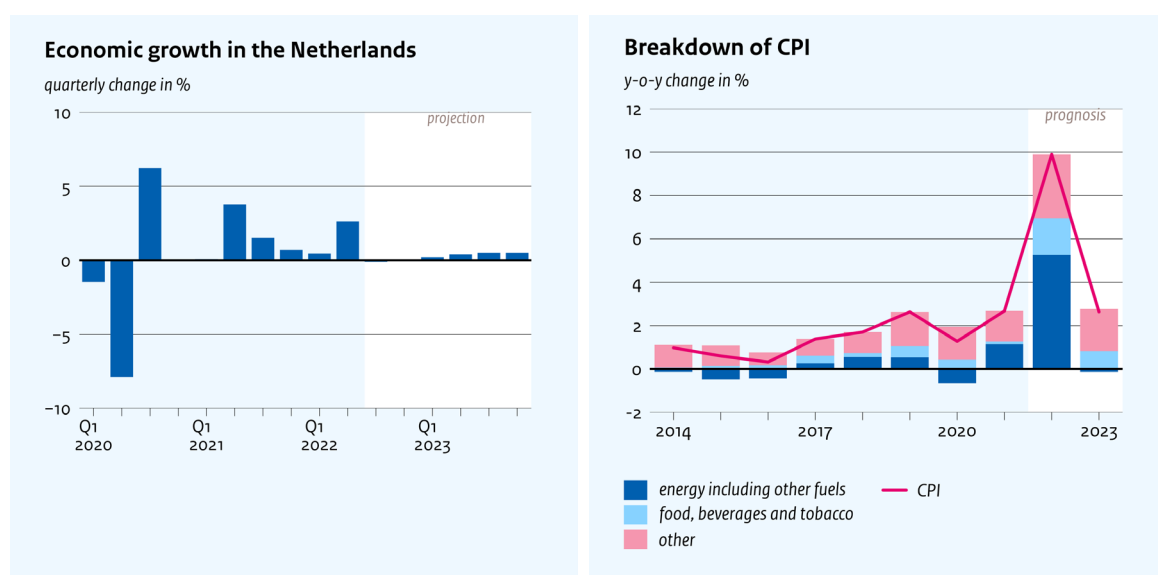
**After a strong economic recovery from the coronavirus crisis, growth is now slowing down as inflation exerts pressure on household spending.** The Dutch economy has recovered strongly following the coronavirus crisis. The high growth up to and including the last quarter still results in a high growth rate of 4.6% for 2022, but below the surface the situation is starting to swing the other way. The war in Ukraine and the disruptions caused by the coronavirus crisis have led to a sharp rise in inflation. In particular, the very rapid rise in energy prices is having a negative financial impact on a growing number of households, as more and more energy contracts are up for renewal. As a result, consumption growth will come to a standstill in the coming quarters. Inflation and the related uncertainty – as well as central bank rate rises aimed at curbing

<sup>1</sup> The economic data in these projections have not been updated since the cMEV; in the case of gas prices this means they are based on the market expectation at the end of July. Policy measures issued up to 7 September have been included.

inflation – are slowing down economic growth around the world. In the uncertainty variant with higher gas prices, there is a mild technical recession (at least two quarters of contraction).

**The pace of GDP growth is set to slow markedly next year to 1.5%.** The purchasing power measures in the Budget Memorandum have a positive effect on the trend in consumption, which – unlike in the cMEV – is consequently positive. Public expenditure will also contribute to growth, although CPB believes it will not be possible to implement a substantial part of the planned increase in spending due to supply problems and labour shortages. Exports will also generate growth. In the uncertainty variant with lower gas prices, GDP grows by 1.9% in 2023; with higher gas prices it grows by 0.6% in 2023.

**Figure 1.1 Economic growth levels off due to high inflation**



Source: Statistics Netherlands and CPB ([link](#))

**The deterioration in the economic outlook at home and abroad makes businesses reluctant to invest.** Investments will barely grow next year. This is consistent with the global trend of declining investment shares. The causes are only partly understood, but the growing importance of intangible investments may be a factor. This is considered in further detail in the section entitled “From machines to marketing”.

**Despite the tight labour market, wages show remarkably little growth.** The labour market remains tight as the moderating effect of the cooling economy is offset by growing demand for labour in the public sector. The increase in the national minimum wage (NMW) has a slight upward impact on wage growth, partly due to the knock-on effect on slightly higher wage scales. No effect on employment has been assumed in the short term; a limited downward impact is expected in the medium term.<sup>2</sup> Unemployment rises slightly to 3.9% in 2023. The collective labour agreements concluded thus far indicate no substantial acceleration of wage growth, despite labour market tightness and the favourable position in especially export-focused sectors. Relatively favourable corporate earnings and a declining labour income share (LIS) in 2023 suggest there is room for wage growth, although this will differ greatly depending on the sector and business. No immediate wage response to price movements has been assumed in the uncertainty variants, because wages will not react strongly to a different inflation figure in the short term.

<sup>2</sup> Van Essen, Van Sonsbeek and Rabaté (2020), Effecten verhogen minimumloon ([link](#)).

**Table 1.2 Main data for the Netherlands, 2018-2023**

	2018	2019	2020	2021	2022	2023
changes per year in %						
<b>International economy</b>						
Relevant world trade volume goods and services	3.8	4.1	-9.1	8.4	4.9	2.9
Competitor prices (a)	-1.6	3.5	0.3	6.1	9.7	3.2
Oil price (in USD per barrel)	70.9	64.3	41.8	70.7	105.3	89.7
Euro exchange rate (USD per euro)	1.18	1.12	1.14	1.18	1.06	1.02
Long-term interest rate, the Netherlands (level in %)	0.6	-0.1	-0.4	-0.3	1.1	1.6
<b>Prices, wages, purchasing power and poverty</b>						
Gross domestic product (GDP, economic growth)	2.4	2.0	-3.9	4.9	4.6	1.5
Household consumption	2.2	0.9	-6.4	3.6	5.7	1.8
Public consumption	1.7	2.8	1.6	5.2	1.7	3.2
Investments (including stocks)	3.9	7.7	-6.3	2.9	2.5	1.2
Exports of goods and services	4.3	2.0	-4.3	5.2	4.0	3.2
Imports of goods and services	4.7	3.2	-4.8	4.0	2.8	3.9
Price level gross domestic product	2.4	3.0	1.9	2.5	4.2	4.9
Export prices of goods and services	2.1	0.4	-2.9	8.3	16.6	2.9
Import prices of goods and services	2.2	-0.2	-3.6	10.2	22.1	2.6
Inflation, national consumer price index (CPI)	1.7	2.6	1.3	2.7	9.9	2.6
Inflation, harmonised index of consumer prices (HICP)	1.6	2.7	1.1	2.8	11.4	2.5
Wage rate business sector (per hour) (c)	1.9	2.6	7.9	0.1	2.4	4.6
Contract wages business sector	2.0	2.4	2.8	2.2	2.9	3.7
Purchasing power, static, median all households	0.0	1.1	2.6	0.3	-6.8	3.9
People in poverty (level in %) (d)	5.9	6.0	5.6	5.7	6.7	4.9
<b>Labour market</b>						
Labour force	1.2	1.5	0.4	0.9	1.7	1.4
Active labour force	2.2	2.0	0.0	1.5	2.5	1.0
Unemployed labour force (x thousand persons)	459	423	465	408	340	385
Unemployment rate (% of the labour force)	4.9	4.4	4.9	4.2	3.4	3.9
Employment (in hours)	2.7	2.6	-2.8	3.3	5.2	0.5
<b>Other items</b>						
Labour income share (in %)	73.6	73.9	76.3	74.5	75.0	73.3
Labour productivity private sector (per hour)	-0.2	-0.5	-1.5	2.5	-0.4	1.1
Private savings (in % of disposable income) (b)	4.0	5.2	12.8	11.5	6.2	5.7
Current account balance (in % of GDP)	10.8	9.0	7.1	9.0	7.2	6.8
in % of GDP						
<b>Public sector</b>						
EMU balance	1.5	1.8	-3.7	-2.6	-1.1	-2.5
EMU debt (year-end)	52.4	48.5	54.7	52.4	49.6	48.8
Taxes and social-security contributions	38.8	39.3	39.9	39.7	39.2	38.2
Gross public expenditure	42.8	42.5	48.2	47.0	45.7	45.7

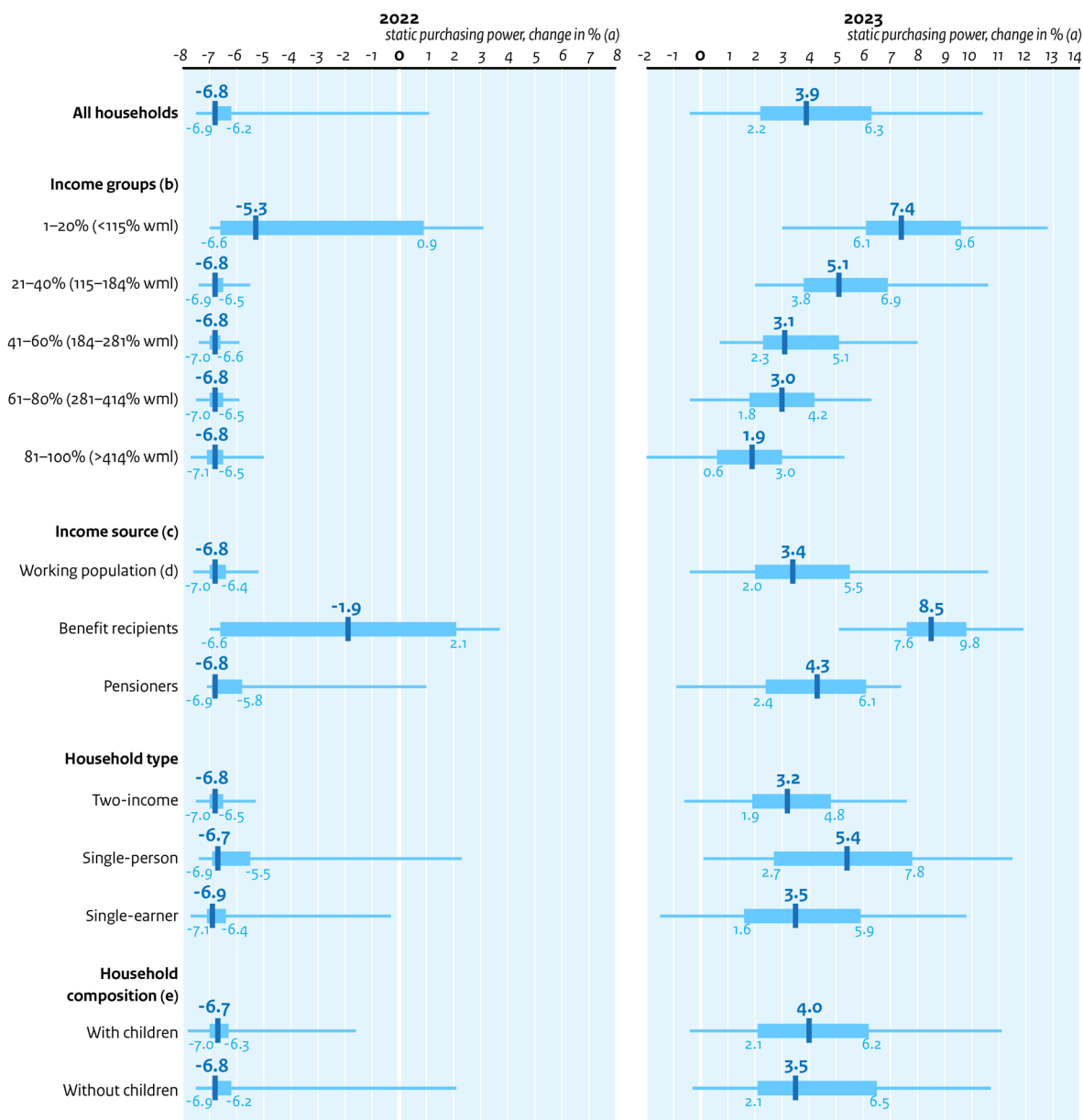
(a) Goods and services, excluding natural resources and fuels.

(b) Level; disposable household income includes public savings.

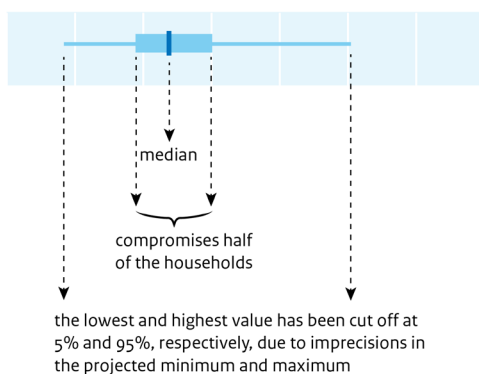
(c) The NOW wage cost subsidy and the continuity contribution in health care will have an upward impact on wage rate changes in the private sector in 2020 of 3.3 percentage points and a downward impact of 2 percentage points in 2021 and 1.2 percentage points in 2022.

(d) The ratio of the number of persons in households below the poverty line to the total number of persons. The modest-but-adequate criterion used by the Netherlands Institute for Social Research (SCP) has been adopted as the poverty line.

Figure 1.2 Development of static purchasing power



#### How to read the table?



The 'median' is the middle value of a series of figures, ordered from low to high. A median purchasing power development of 1.3% for all households means that, for half of them, purchasing power development will be 1.3% or less, while, for the other half, it will be 1.3% or more. For half of the households, purchasing power development will be within the blue bar, with one quarter below and one quarter above the median. For the other half, purchasing power development will be outside this range. The box plot's whiskers show the lowest and highest development in purchasing power.

- (a) Not including incidental changes in income.
- (b) Gross labour income or welfare benefits on household level; the national minimum wage (nwm) in 2021 is around 22,558 euros. Income groups have been divided into five groups of equal size in ascending order of income, each containing 20% of all households.
- (c) The categorisation according to source of income is based on the highest income source per household, with households of which the main income is derived from investments or products having been categorised under the employed. Households on early retirement income or student grants as their main source of income have been excluded.
- (d) Changes in purchasing power for the employed do not include incidental wage changes, such as bonuses received or lost.
- (e) The categorisation according to household composition is based on the presence of children of up to eighteen years and excludes pensioner households.

**Purchasing power declines this year, but the policy in the Budget Memorandum leads to a partial recovery next year.** The combination of high inflation and moderate wage growth leads to a sharp decline in purchasing power averaging 6.8% in 2022. Purchasing power rises by an average of 3.9% in 2023. This is significantly higher than in the cMEV and is due to the policy package in the Budget Memorandum. It should be noted that the measures are largely temporary. If energy prices remain high after 2023 and the policy remains unchanged, purchasing power will fall again. The differing purchasing power figures for 2022 and 2023 should be viewed in conjunction, since there are big differences in the time at which households encounter inflation. The purchasing power figures reflect the prices in new energy contracts, so the inflation experience for some households next year will be higher if they have only just encountered the increase at that time.

**Low income households benefit most from the policy, but this group is also the most impacted by inflation.** The group of households with incomes up to 120% of the social minimum are an exception to the negative purchasing power picture in 2022, since they receive the €1,300 energy allowance. A breakdown of the changes in purchasing power by income (Figure 1.2) shows that the effects of the policy package are greatest among lower income groups. It must be borne in mind that the projected purchasing power takes no account of differences in energy consumption. There is significant inflation inequality: the lower the income, the higher the average experience of inflation.

**The gas price uncertainty variants show that purchasing power may also turn out significantly more positive or more negative.** Higher inflation has a direct impact on purchasing power; in the variant with a lower gas price purchasing power averages -6.4% in 2022 and 5.8% in 2023. In the higher gas price variant the average is -8.2% in 2022 and 1.1% in 2023.

**This is the first year in which CPB's projections have included poverty development.** This is in line with the government's aim of including more indicators of general welfare in the budget cycle. The poverty indicator shows how many people have an income below the poverty line (the budget required to meet basic necessities). The number of children living in poverty is also shown separately. CPB has adopted the "modest-but-adequate" definition of poverty used by the Netherlands Institute for Social Research (SCP)<sup>3</sup>, on which the government objectives are also based. Further details of the poverty projection can be found in the section entitled "Poverty and energy costs".

**The projection shows that poverty has increased rapidly in 2022 due to the high inflation, but turns out significantly lower in 2023 as a result of the temporary policy.** The high inflation causes a sharp increase in the budget required to meet basic necessities. As a result, the share of the population in poverty rises to 6.7% in 2022, and in the case of children as much as 9.2%. As in the case of purchasing power trends, it should be noted that not all households encounter the price increases in 2022. The policy set out in the Budget Memorandum (including the €1,300 energy allowance and the increase in the NMW and associated welfare benefits) leads to a sharp fall in poverty to 4.9% of the population and 6.7% of children in 2023. Here too it should be noted that a large part of the policy is temporary; if energy prices remain high after 2023 and the policy remains unchanged, poverty will rise again.

**A stress test shows that 540,000 households are at risk of no longer being able to pay their monthly and necessary expenses; with a higher gas price this number rises to 860,000.**<sup>4</sup> At the request of the House of Representatives, CPB has conducted a new "Cost of living" stress test. The stress test has similarities to the

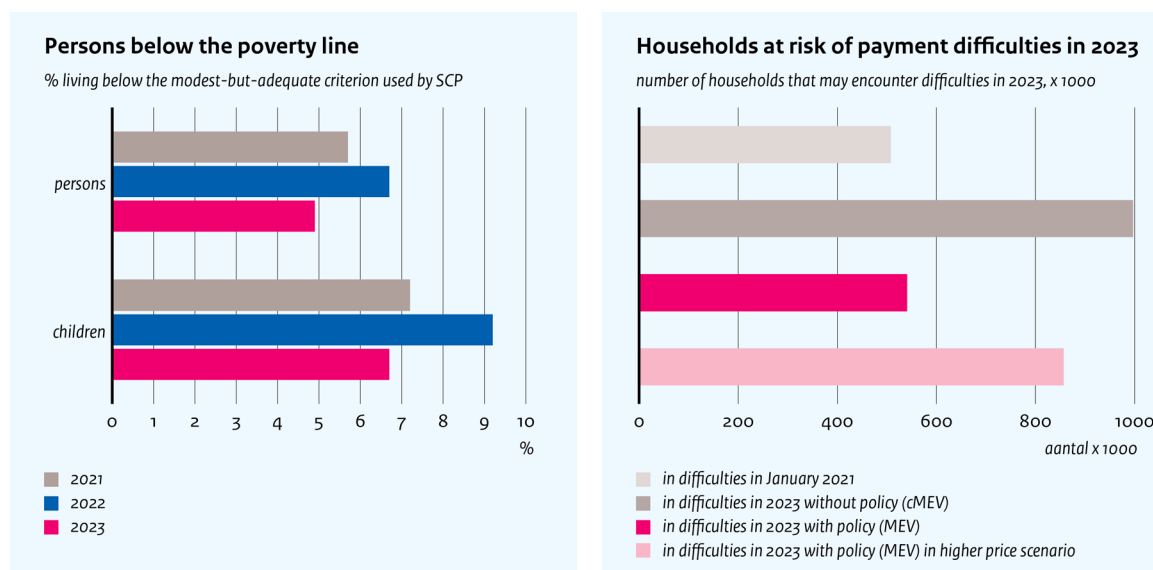
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<sup>3</sup> For a discussion see SCP and CPB (2020), Promising policy for reducing poverty ([link](#)).

<sup>4</sup> This analysis follows the methodology adopted in Schulenberg and Vlekke, 2022, for the cost of living stress test. Further details can be found in the section entitled "Poverty and energy costs".

poverty projection, but differs in that it is based on households' actual expenses. The poverty line is a budget that should enable a household to make ends meet in principle. By contrast, the stress test looks at who may get into difficulty in the short term on the basis of the current expenses. Two variants have been calculated: the baseline projections and the higher gas price variant. The stress test shows that, compared to the cMEV, the policy in the Budget Memorandum will almost halve the number of households at risk of payment difficulties from 1.0 million to 540,000. With the higher gas price this number rises to 860,000 households. The stress test assumes a static situation; whether households actually get into payment difficulties will depend on their adaptability: some households will be able to save energy, generate additional income or draw on savings.

**Figure 1.3 Poverty projection and cost of living stress test**



Source: Statistics Netherlands, CPB and SCP ([link](#))

**The stress test shows that the temporary policy is effective in preventing payment difficulties as a result of low incomes, but not as a result of high energy consumption.** A breakdown by income and income source shows that financially vulnerable households are relatively less likely to be among the lowest incomes and/or receive benefits as a result of the policy. This is consistent with the picture shown by the poverty projection. The policy results in a (partly temporary) increase in income at the lower end, leading to a reduction in vulnerability. On the other hand, households with high energy consumption become more vulnerable as a result of the high prices. This implies that any supplementary policy to reduce vulnerability should ideally target energy bills: through accelerated sustainability or targeted compensation on energy bills.<sup>5</sup>

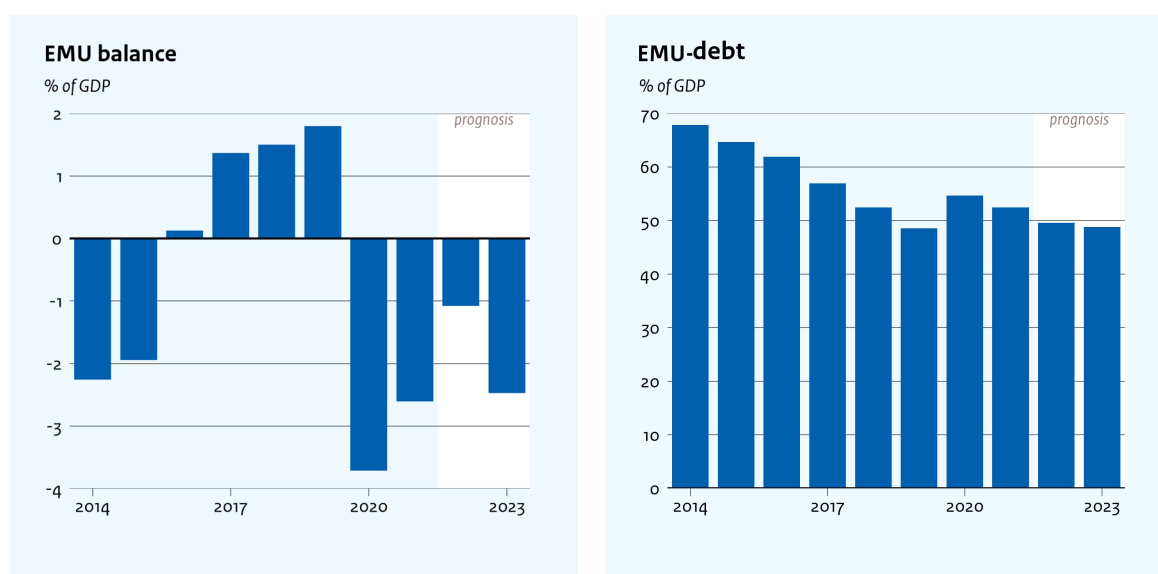
**The public finances benefit from temporary factors in 2022; compared to the cMEV, the deficit in 2023 is markedly higher due to measures in the Budget Memorandum.** Government revenue benefits from additional profit tax revenue following the recovery from the coronavirus crisis. The high gas price also leads to substantially higher revenues from natural gas sales. Due to the tight labour market, it is not possible to make all planned increases in spending, so public expenditure rises by less than budgeted. Under the influence of these developments, the EMU balance improves to -1.1% of GDP in 2022. In 2023 the deficit rises again to 2.5% of GDP, a deterioration of 1.4% of GDP compared to the picture in the cMEV as a result of the decisions taken by the government in August. The structural deficit in 2023 is -3.0% of GDP. The debt ratio falls, partly as a result of inflation (the 'denominator effect'), to 49% of GDP in 2023.

<sup>5</sup> As there is still no certainty about the design and feasibility of a social energy tariff, the amount set aside on the basis adopted by the Ministry of Finance has been included as a generic energy tax cut.



**Compliance with budget rules is currently inadequate, but a proper budget process is important even in exceptional times.** Exceptions have been made to budget rules since 2020, initially as a result of the coronavirus crisis and the associated uncertainties, but this seems to have established a pattern that is difficult to break. It is understandable that adherence to budget rules is not the first priority in crisis situations. In these exceptional circumstances, there is a good case to be made for using the higher revenues from natural gas sales to alleviate the financial burden. Exceptions to the rules must be clearly justified, however – after all, the rules must be reaffirmed. That is not always the case; at present CPB is even unable to gain a full overview and analyse all the ceiling adjustments and framework corrections that the government has made. Without binding budget rules it is difficult for policymakers to make a comprehensive assessment, control public expenditure, fulfil the stabilisation function and achieve an efficient allocation.

**Figure 1.4 EMU balance deteriorates due to purchasing power package, EMU debt falls due to higher nominal GDP (denominator effect)**



Source: Statistics Netherlands and CPB ([link](#))

**The economic outlook remains highly uncertain.** Not only is the gas price impacted by the course of the war in Ukraine and Russian energy policy, but the uncertainty also affects decisions by households and businesses due to the impact on confidence. There are also other risks: there is still a threat of a new wave of coronavirus, and there is also a risk that central banks will fail to curb inflation or that they will have to intervene even more aggressively to rein in inflation expectations. Widening interest rate differentials in the euro area may also create tensions. In view of these risks and the very moderate growth, it is quite possible that several quarters of negative growth will arise (a technical recession), as is shown by the high gas price variant. The significance of this should not be overestimated; the tight labour market makes a rapid rise in unemployment unlikely, for example. An upside uncertainty in the projection – in addition to an end to the war and a fall in energy prices – is that consumption may turn out higher if households spend the savings built up during the coronavirus pandemic.

## 2 Gas price uncertainty variants

*This chapter describes two uncertainty variants that show the sensitivity of inflation, purchasing power, poverty and economic growth to the trend in gas prices. The gas price in the baseline projections is based on market expectations for the gas price at the end of July. If the gas price turns out higher, purchasing power will be hit harder, more people will fall into poverty and economic growth will deteriorate further. By contrast, a faster fall in the gas price will contribute to the recovery next year: purchasing power will then grow more than in the baseline projections and the number of people in poverty will fall more sharply. Higher consumption also drives economic growth higher.*

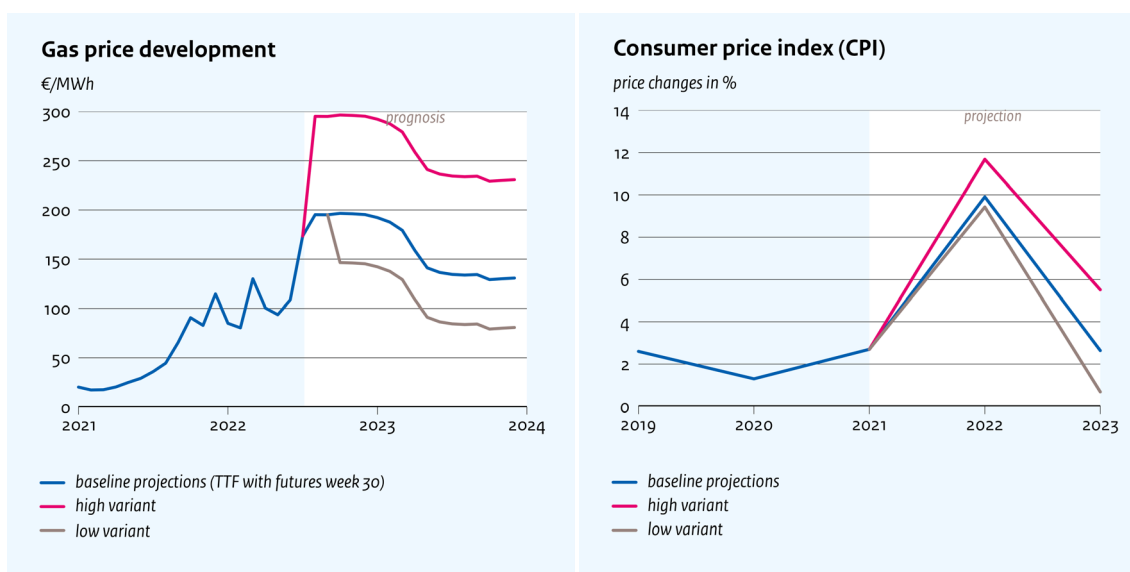
**Table 2.1 Baseline projections and variants, 2021-2023**

	2021	2022	2023	2022	2023	2022	2023
	baseline projections			low variant		high variant	
National consumer price index (CPI, %)	2.7	9.9	2.6	9.4	0.7	11.7	5.5
Gross domestic product (GDP, economic growth, %)	4.9	4.6	1.5	4.6	1.9	4.5	0.6
Household consumption (volume in %)	3.6	5.7	1.8	5.8	2.7	5.6	0.0
Investments (including stocks, volume in %)	2.9	2.5	1.2	2.5	1.8	2.4	0.1
Exports of goods and services (volume in %)	5.2	4.0	3.2	4.0	3.3	3.9	3.0
Purchasing power; static; median all households (%)	0.3	-6.8	3.9	-6.4	5.8	-8.2	1.1
People in poverty (level in %) (a)	5.7	6.7	4.9	6.5	4.3	7.2	5.7
Unemployment rate (% of the labour force)	4.2	3.4	3.9	3.4	3.8	3.5	4.0

(a) The ratio of the number of persons in households below the poverty line to the total number of persons. The modest-but-adequate criterion used by the Netherlands Institute for Social Research (SCP) has been adopted as the poverty line.

**Because of the great uncertainty surrounding energy prices, we have calculated the impact on inflation, purchasing power, poverty and economic growth if the energy price trend differs from that in the baseline projections.** The gas price in the baseline projections is based on futures (Dutch TTF) for week 30 (25-29 July). By means of two variants we show what would happen if it turns out higher or lower. Figure 2.1, left, shows the trend in the gas price in the two variants and in the baseline projections. In the low variant the gas price is €50 below the baseline projections from the fourth quarter of 2022. Inflation (CPI) will then be 9.4% in 2022 and 0.7% in 2023 (Figure 2.1, right). In the high variant the gas price from the third quarter of 2022 is €100 higher than in the baseline projections. These higher energy prices lead to inflation of 11.7% in 2022; in 2023 it is 5.5%. The rise in wages in these variants has been assumed to be the same as in the baseline projections, because they will not react strongly to a different inflation figure, at least in the short term. The August policy has been included in the same way in both variants and in the baseline projections.

Figure 2.1 Gas price in baseline projections and variants, CPI in baseline projections and variants



Source: CPB ([link](#))

**Higher or lower inflation affects purchasing power and – particularly through household consumption – GDP growth.** In the low variant, households' purchasing power improves compared to the baseline projections: in 2023 in particular, the recovery is somewhat stronger at 5.8%. The proportion of people in poverty (4.3%) is also lower than in the baseline projections. Consumption consequently rises and GDP growth in 2022 and 2023 turns out higher. In the high variant, purchasing power falls even more sharply than in the baseline projections, by -8.2% in 2022, and the recovery in 2023 is reduced to 1.1%. The share of people in poverty rises to 5.7% in 2023. Households have less to spend, so consumption no longer grows in 2023 and GDP growth slows to 0.6%. The rise in unemployment remains limited: on an annual basis the rate is 4.0%, 0.1 percentage point higher than in the baseline projections.

### 3 Poverty and energy costs

*CPB will from now on include a poverty indicator in the projections. Poverty is an important dimension of general welfare, and the government has set poverty reduction targets. The new poverty projection shows a rapid rise in the cost of basic necessities due to higher energy bills. Consequently, 6.7% of the population falls below the poverty line in 2022. The (partly temporary) policy announced in the Budget Memorandum leads to higher disposable income at the lower end, with the result that poverty decreases to 4.9% in 2023, clearly below the 2021 level. An updated “Cost of living” stress test shows that this policy also prevents a sharp rise in the number of households at risk of payment difficulties. Below the surface it is clear that vulnerability due to low income has decreased as a result of the temporary policy, but on the other hand vulnerability due to high energy bills has increased. In a scenario with an even higher gas price the number of households having difficulty paying their monthly and necessary expenses rises from 540,000 to 860,000.*

**Poverty determines quality of life and the introduction of a poverty projection is in line with the ambition of focusing on general welfare.** Money does not buy happiness, but conversely a lack of money is at the root of social and societal problems, such as social isolation and damage to physical and mental health.<sup>6</sup> Recent CPB research, for example, shows a strong correlation between problem debt and mental health.<sup>7</sup> Poverty also causes inequality of opportunity and can be passed on to future generations: children who grow up in poverty are more likely to live in poverty as adults (with their children). The fight against poverty is a key element of national and international policy. For these reasons, the Statistics Netherlands Monitor of Well-being includes a poverty indicator.<sup>8</sup> In order not only to measure but also to manage poverty, it is important to project its development and quantify the effects of policy.

**The poverty projection is based on the ‘modest-but-adequate’ criterion used by SCP.** Poverty is not a static concept: as society becomes wealthier, the poverty benchmark shifts. Poverty can be defined in different ways; for the poverty indicator in the MEV, CPB has adopted the ‘modest-but-adequate’ definition used by SCP. This indicator is based on reference budgets for different expenditure categories. The government targets for poverty reduction are also based on this definition.<sup>9</sup> Examples of other definitions are the Eurostat poverty line (60% of the median income in a country) and the low income threshold of Statistics Netherlands (the 1979 social welfare benefit level, indexed to inflation). There is no objectively ‘best’ criterion for poverty, and year-on-year indicators will generally point in the same direction.<sup>10</sup>

**SCP’s modest-but-adequate criterion is periodically reassessed and is indexed during intervening periods.** The reference budgets have been adopted by SCP in cooperation with Nibud and are periodically reassessed, the last reassessment having taken place in 2017. To take account of rising prices and changes in usage patterns, the criterion is indexed annually in nominal terms on the basis of inflation (CPI) and in real terms on the basis of the increase in the five-year average of expenditure per household on energy, water, food, clothing, housing and housekeeping. In 2020 the criterion was €1,245 per month for a person living alone and in the projections this rises to €1,533 in 2023. Since the indexation is currently complicated inflation inequality caused by high energy prices and also by rapid growth in consumption following the coronavirus

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<sup>6</sup> There is wide international literature in this field; for a discussion see CPB and SCP, 2020, Promising policy for reducing poverty, Netherlands Bureau for Economic Policy Analysis & The Netherlands Institute for Social Research, The Hague.

<sup>7</sup> CPB, 2021, When financials get tough, life gets rough?

<sup>8</sup> Statistics Netherlands, 2019. Monitor of Well-being and the Sustainable Development Goals 2019. The Hague, Statistics Netherlands.

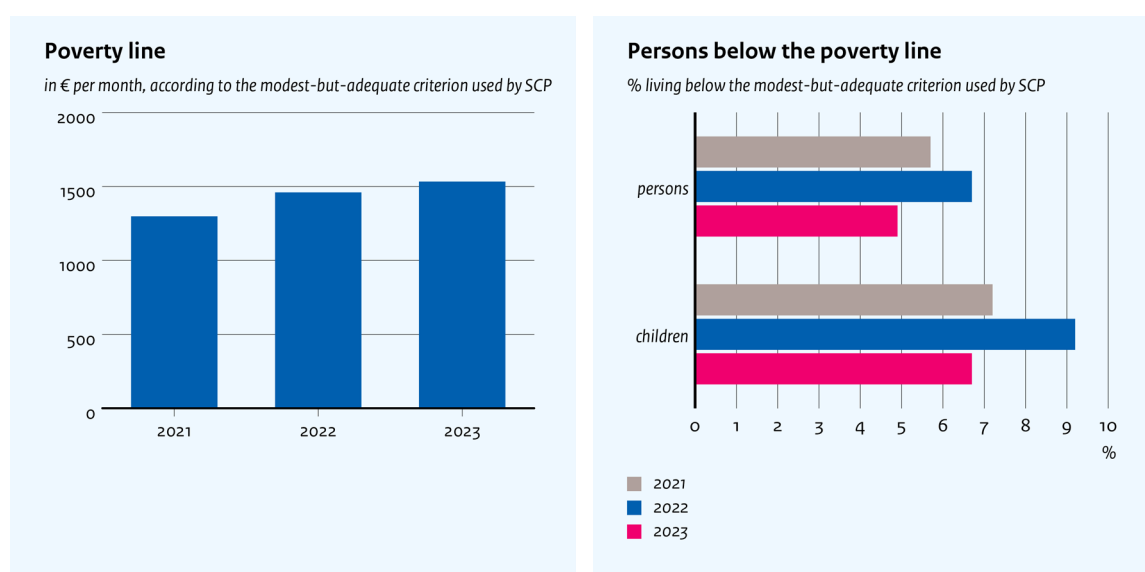
<sup>9</sup> The objective (compared to 2015) is to halve child poverty in the next government term and general poverty by 2030, see: Government of the Netherlands, 2021. Coalition agreement 2021: Looking out for each other, looking ahead to the future, The Hague.

<sup>10</sup> The Social Minimum Committee has recently been established to consider a definition of the social minimum. When this process results in a new, broadly supported poverty threshold, CPB will switch to it if possible.

crisis, a sensitivity analysis has also been carried out to correct for these factors.<sup>11</sup> The poverty line in 2023 then amounts to €1,514, so the overall sensitivity is limited.

**The poverty projection is based partly on the same information as the purchasing power projection and provides additional insight.** CPB projects the number of households and persons below the poverty line by using the MIMOSI micro-simulation model<sup>12</sup>, which is also used to project purchasing power figures. Whereas the purchasing power trends provide a relative view of the income distribution by comparing year-on-year changes for different groups, the poverty projection provides an absolute view of the income distribution: how many households have an income below the poverty line? Unlike the static purchasing power calculations (which ignore changes in household composition, labour force participation, etc.), the poverty indicator corrects for demographics and certain macroeconomic developments, such as a change in unemployment.

**Figure 3.1 Poverty line rises further in 2023, but poverty percentage falls**



Source: CPB and SCP ([link](#))

**The projection shows a rise in poverty in the Netherlands in 2022.** High inflation makes it difficult to make ends meet. Incomes do rise (partly due to the €1,300 energy allowance), but expenditure on basic necessities rises even faster. As a result, many households are ‘caught up’ by the poverty line: the number of persons in poverty rises to 6.7% in 2022 and the proportion of children living in poverty is as much as 9.2%. In the sensitivity analysis these percentages are 7.3% and 9.1% respectively.

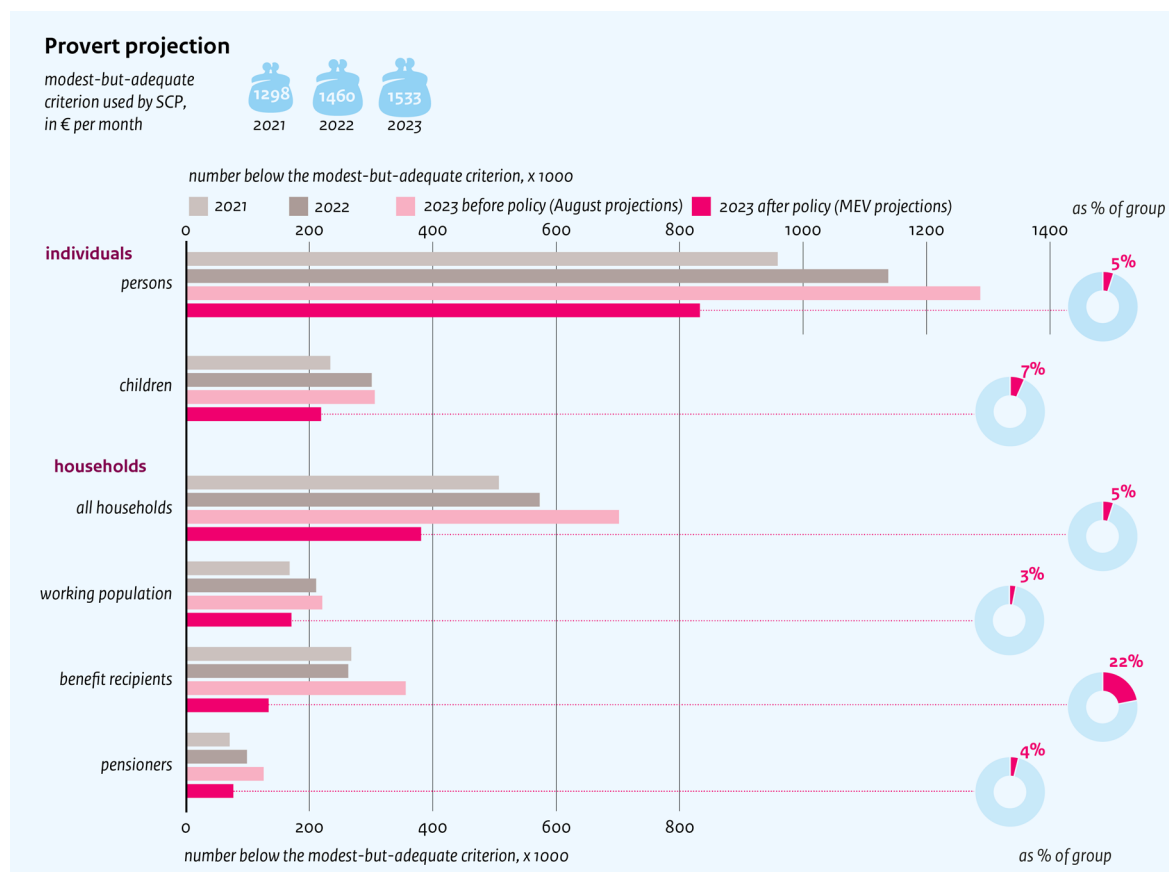
**The government policy leads to a rapid decline in poverty in 2023, partly due to temporary policy.** The government policy announced in the Budget Memorandum (including the extension to the €1,300 energy allowance, an increase in supplements and the NMW and benefits that are indexed to the NMW) leads to a substantial increase in income at the lower end. The rate of poverty consequently falls sharply to 4.9% of the

<sup>11</sup> Since energy represents a relatively larger share of the spending pattern for low income households, the energy share of the budget rises faster for low income than for average income households. Moreover, consumption by average households has risen very sharply after the coronavirus crisis. This is likely to have been much less the case for households at the lower end, which have not been able to afford any ‘catch-up consumption’. The first factor suggests that indexation of the poverty line is too low, whereas the second factor may result in overly high indexation. In the sensitivity analysis, inflation has been adjusted to take account of the shares of the different categories in the reference budget (energy, food, etc.) and consumption growth has been set at a historical average. The means-tested rent reduction also makes a difference to the nominal inflation components of the sensitivity analysis in 2023.

<sup>12</sup> See Koot et al. (2016): CPB background document on MIMOSI ([link](#)) (in Dutch).

population and 6.7% of children in 2023. In the sensitivity analysis the figures are lower still, at 4.6% and 6.0% respectively. It should be noted that part of the policy is temporary. If energy prices remain high after 2023 and the policy remains unchanged, poverty will rise again.

**Figure 3.2 Welfare benefit recipients see biggest decrease in poverty in 2023**



Source: CPB and SCP ([link](#))

**The sharpest decrease in the poverty rate in 2023 is among welfare benefit recipients; this group has clearly fewer people below the poverty line, even relative to 2021.** A breakdown by source of income of the main breadwinner in Figure 3.2 illustrates the underlying shifts. For the working population and pensioner groups, the rate of poverty in 2023 is close to the 2021 level. Among welfare benefit recipients there is no rise in 2022 (social welfare benefit recipients receive the €1,300 energy allowance) and poverty in this group halves in 2023 compared to the 2021 and 2022 level. Here too it should be noted that this is partly the result of temporary policy.

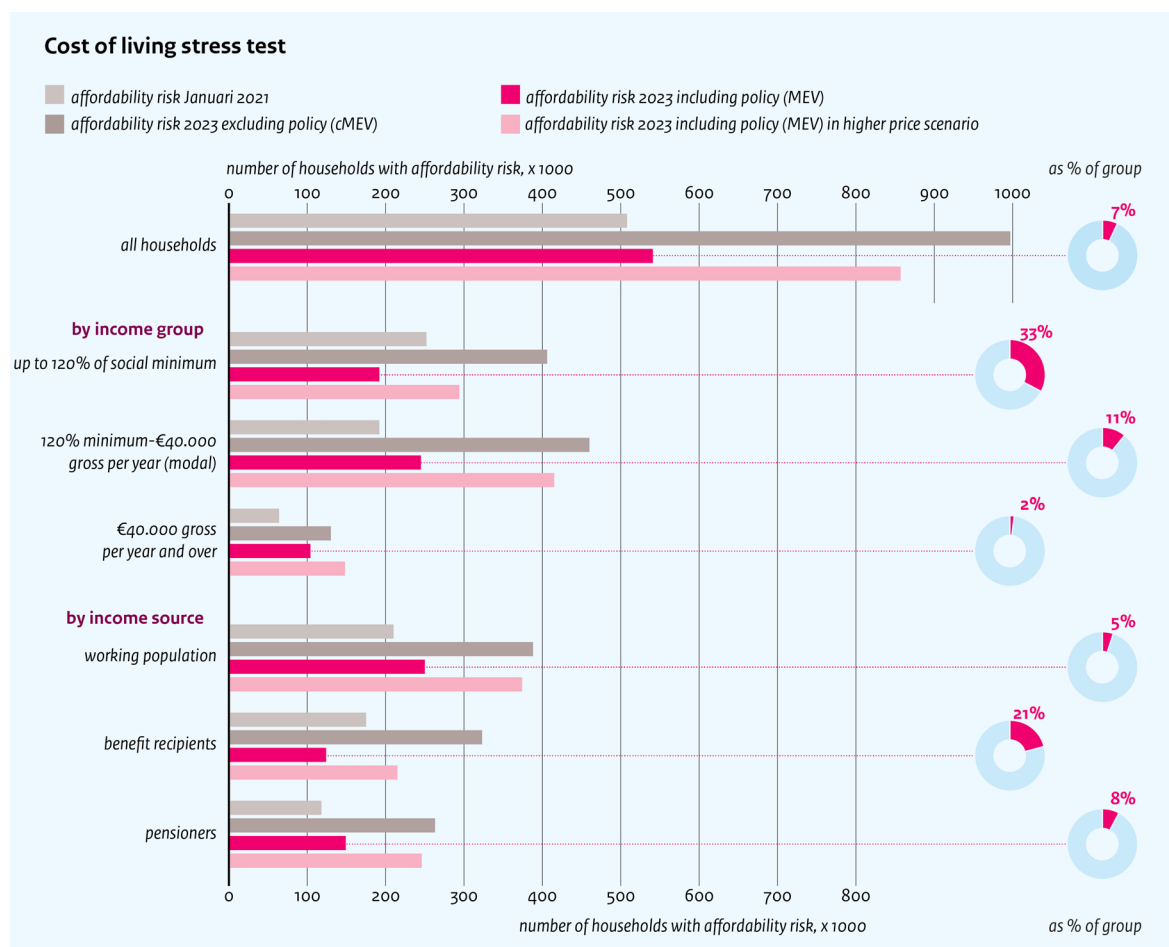
**At the request of the House of Representatives<sup>13</sup> CPB has conducted a new stress test to analyse how many households are at short-term risk of no longer being able to pay their monthly and necessary expenses.** This analysis follows the methodology of the “Cost of living” stress test which CPB published earlier this year.<sup>14</sup> The stress test has similarities to the poverty projection, but also differs in important respects. The

<sup>13</sup> See letter from P. Hasekamp dated 26 August ([link](#)) (in Dutch).

<sup>14</sup> Schulenberg and Vlekke, 2022. This new stress test assumes that estimated monthly and necessary expenses are at the projected average price level in 2023. The previous stress test was based on the December 2023 price level, but its use could lead to an underestimate of the payment difficulties, since projected energy prices fall in the course of 2023.

stress test takes SCP's basic necessities budget<sup>15</sup> as the starting point for the monthly and necessary expenses, but uses households' actual expenses based on rent and energy expenditure at individual household level. The poverty line is a budget that should enable a household to make ends meet in principle. By contrast, the stress test looks at who may get into difficulty in the short term on the basis of the current expenses; after all, it is not always immediately possible to move house or save energy. Two scenarios have been calculated for the stress test: the baseline projections from the MEV and the uncertainty variant with a higher gas price. The policy set out in the Budget Memorandum has been taken into account, with the policy effect (difference between cMEV and MEV) being shown separately.

**Figure 3.3 Temporary policy halves vulnerability in baseline projections**



Source: CPB ([link](#))

**The stress test shows that in the baseline projections 540,000 households risk getting into payment difficulties if no changes are made.** The stress test assumes a static situation; whether households actually get into payment difficulties will depend on their adaptability: some households will be able to save energy, generate additional income or draw on savings. The number of households at risk is not much higher than in the starting position in 2021, before the surge in energy prices. The fact that the rise is so limited is due to the policy in the Budget Memorandum; on the basis of figures in the cMEV (without supplementary policy) it was still 1 million households. Hence the cMEV picture was close to the dark scenario in the previous stress test.

<sup>15</sup> This is a more basic definition than the modest-but-adequate criterion, the difference lying among other things in social participation (including birthdays, holidays and outings).

Since the policy is partly temporary, here too it should be noted that the picture deteriorates markedly after 2023 if high energy prices persist.

**Below the surface it is clear that vulnerability due to low income has decreased as a result of the temporary policy, but on the other hand vulnerability due to high energy bills has increased.** A breakdown by income and income source shows that vulnerable households are less likely to be among the lowest incomes and/or receive benefits. This is consistent with the picture shown by the poverty projection. The policy raises income at the lower end, leading to a reduction in vulnerability. On the other hand, households with high energy consumption are more vulnerable as a result of the high prices. This also implies that any supplementary policy to reduce vulnerability should ideally target energy bills: through accelerated sustainability or targeted compensation on energy bills.<sup>16</sup>

**In a higher gas price scenario, the number of households at risk of payment difficulties rises by over 300,000.** To give an impression of the consequences of an even higher gas price, the uncertainty variant was also calculated with a higher gas price (see “Gas price uncertainty variants” for more information). In this scenario 860,000 households are at risk of payment difficulties. The group with an income of 120% of the social minimum up to the average is most strongly represented in this increase.

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<sup>16</sup> As there is still no certainty about the design and feasibility of a social energy tariff, the amount set aside on the basis adopted by the Ministry of Finance has been included as a generic energy tax cut.



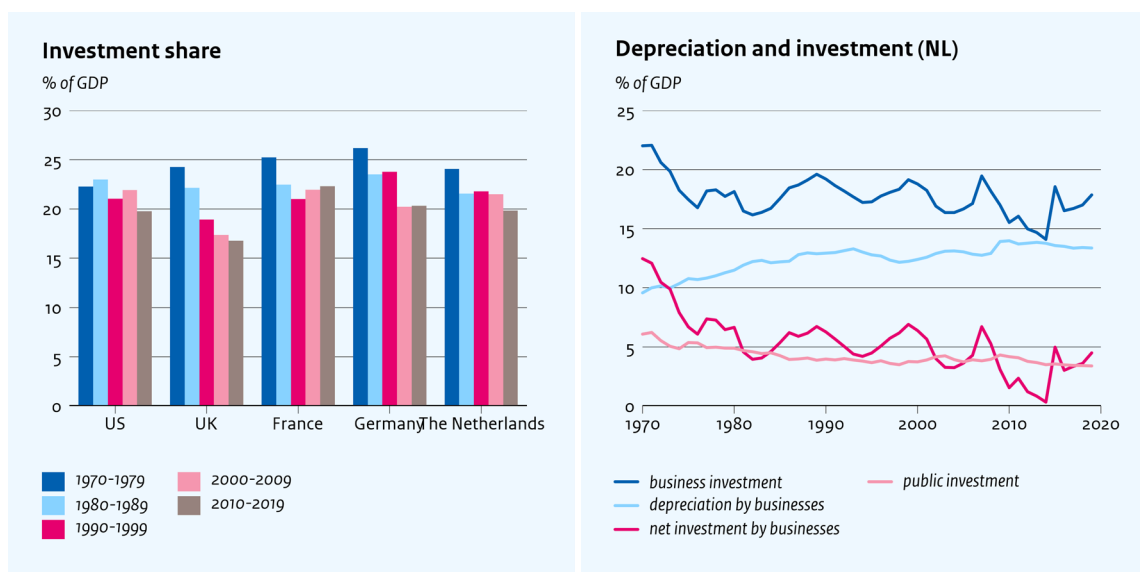
## 4 From machines to marketing

Economists have for some time been puzzled by the fact that investment is not increasing – the investment share has even fallen – when interest rates are considerably lower than in the 1970s and 1980s. At the same time, the nature of investment has changed: businesses are increasingly investing in intangible assets, such as databases, product research and marketing, and less in physical capital goods. This shift may partly explain why the investment share has fallen and why investment reacts less strongly to output and interest rates than before.

**Investment in the Netherlands and other Western economies shows a downward trend.** Figure 4.1, left, shows the investment share (share of gross investment in GDP) in the Netherlands and the four largest Western economies. Compared to the 1970s, this has decreased in all countries, albeit to differing degrees. A declining share can be seen as problematic, because investment is necessary to maintain and/or increase a country's productive capacity. The largest decreases can be seen in Germany and the United Kingdom. In the Netherlands, the investment share between 2010 and 2019 was on average 4.2 percentage points lower than in the 1970-1979 period. The most important aspect is the decline in business investment, although public investment as a share of GDP has also decreased slightly (Figure 4.1, right). At the same time, the volatility of year-on-year investment growth has increased; gross investment by businesses and households grew by 35% in 2015, for example.

**The fall in the investment share is notable given the falling interest rates and rising depreciation.** A lower interest rate makes it cheaper to borrow money for investment and is viewed in economic theory as a driver of investment. Depreciation has actually increased as a percentage of GDP (see Figure 4.1, right). For the investment share we look at gross investment, i.e. investment including depreciation, but for the development of the capital goods supply, and hence a country's productive capacity, the net investment, excluding depreciation, is important. To maintain the same level, higher gross investment is necessary when depreciation increases. Net investment is therefore falling even more sharply than gross investment (Figure 4.1, right). All this information raises the question of whether we still understand investment.

**Figure 4.1 Investment share falls in Western economies while depreciation rises as % of GDP**



Source: OECD, Statistics Netherlands (own calculation) ([link](#))

**The nature of the economy, and hence the type of business investment, has changed dramatically.** In 1970, the top 10 largest businesses in the US were dominated by automotive and oil industry giants. They mainly invested in tangibles. In 2020, these businesses are no longer among the leaders; Microsoft, Apple, Amazon and Alphabet (Google's parent company) now top the ranking. These businesses have one thing in common: they owe their success largely to intangibles. In the Netherlands, the tech giants are slightly less dominant, but we can also see a shift here: the industrial dominance at the top has given way to technology companies, retailers and service providers.

**The growth of intangible assets may explain why the investment share is falling.** Intangible assets are not all measured properly and they have certain characteristics that give rise to different economic mechanisms than physical capital. This also raises the question of whether the falling investment share based on conventional data is actually a problem.

**Not all intangible investments are recorded as such in the National Accounts.** Concrete examples of intangible assets are marketing campaigns, research into new products and production methods and the creation of databases, but also the establishment of new organisational structures. Economists see these as investments, because the benefits of the expenditure usually materialise in the future if they enable a business to increase production or produce more efficiently, just like in the case of a new machine, for example. In the economic literature, intangible assets are subdivided into automated information (software and databases), innovative property (R&D, copyright and patents) and organisational capital (e.g. marketing of brand names, employee training and organisational consulting).<sup>17</sup> The first category is included in investments in the National Accounts, just like investments in R&D. The other components are not included, so these fall under intermediate inputs (costs for a business). It is the investments in organisational capital that seem important in the Dutch economy.<sup>18</sup> If these were quantified as investments, the investment share would automatically be higher.

**In the Netherlands too, businesses are increasingly investing in intangible assets.** 30% of Dutch business investments (excluding housing) in 2021 consisted of intangible assets. In 1996 the share was still less than 20% (Figure 4.2, left). These figures are based on the National Accounts, so investments in organisational capital and part of the investments in innovative property are not included.

**In addition to tangibility, intangible assets differ from tangible assets in a number of important characteristics.**<sup>19</sup> Investments in intangible assets can have positive spillovers to other businesses that have not made the investment themselves. The property rights to an idea are more difficult to define than the rights to a delivery van, which means that other businesses can copy the idea (or part of it), for example. Businesses are therefore uncertain what the private benefits of their investment will be. The spillovers to other businesses may also be negative, because they lose market share (business stealing). Research shows that spillovers are mainly positive in the case of investments in R&D, but for investments in marketing, for example, that is probably not the case.<sup>20</sup> The sunk costs of investing in intangible assets are often greater. These are costs that cannot be recovered in the event of a change of direction. This is because it is often more difficult to sell the assets again, because they often involve business-specific knowledge. The value of the assets is also more difficult to determine and more uncertain. A promising innovation in business 1 may suddenly plummet in value if business 2 comes up with an even better idea. This type of investment is more scalable than tangible investments. Developing an idea often costs a lot of money (the fixed costs are high), but it can then be rolled out cheaply on a large scale (the marginal costs are low).

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<sup>17</sup> See Corrado et al., 2005, [link](#).

<sup>18</sup> See Freeman, 2021, [link \(in Dutch\)](#).

<sup>19</sup> Haskel and Westlake, 2018, [link](#).

<sup>20</sup> Bloom, Schankerman and Van Reenen, 2013, [link](#).

**These characteristics lead to higher depreciation and a weaker relationship between intangible investment and interest rates.** Since the value of intangible assets is liable to fall quickly, the depreciation rate is higher than for tangible assets and in particular spread unevenly between businesses.<sup>21</sup> Economists call this the winner-takes-all principle: the returns on investments are unevenly spread between businesses because only one investment 'wins'. Take the dominance of Airbnb in the accommodation market and WhatsApp in communication, for example. This aspect, combined with potentially larger spillovers and higher sunk costs, makes the return on investments more uncertain, so bank loans are a less commonly used financing source for intangible assets than for tangible assets. The lack of solid collateral is also a factor.<sup>22</sup> Equity and (particularly in the US) venture capital are used relatively more often for intangible investments. Research also shows that since intangible investments are therefore less often financed with borrowed money, the interest rate may have less effect on their development.<sup>23, 24</sup>

**The greater scalability and spillovers may also lead to fewer investments.** Economies of scale mean that fewer additional investments are needed to roll out a successful investment.<sup>25</sup> Positive spillovers to other businesses may also cause a reluctance to invest.<sup>26</sup> Businesses may fear that other businesses will reap the benefits of their investments.

**Intangible assets also affect the development of investments in the short term: they are less sensitive to economic fluctuations, but more sensitive to incidental outliers.** Investments in intangible assets are less cyclical than tangible investments. This means they are less closely correlated with overall economic growth. In crises, we have therefore seen investment in tangible assets falling substantially, while investment in intangible assets continues to grow. A possible explanation is that the investment often takes much longer to pay off. With a new machine you can immediately produce more; when a business starts a new research programme, it will not be clear at the outset whether it will increase productive capacity or efficiency, and it will take longer for the effect to materialise. Cyclical fluctuations in demand are consequently less important for this type of investment.<sup>27 28</sup> Volatility is also lower because current expenditure is used as an indicator for R&D, for example, whereas in the case of a machinery purchase the entire investment is entered in the accounts immediately at the time of purchase. In the first case, the investment is spread over a longer period, for example over the duration of the research team's work. At the same time, statistics on intangible investments are much more sensitive to outliers possibly related to the fact that intangible assets are fairly easy to move internationally, for example for tax reasons. The enormous growth in 2015, for example, was due to accounting for royalties by a large multinational. These kinds of movements are difficult to estimate, particularly because they are not related to recessions, for example.

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<sup>21</sup> See also Corrado et al., 2021, [link](#).

<sup>22</sup> See Statistics Netherlands, 2019, [link](#); van Ark et al., 2009, [link](#); Haskel and Westlake, 2018, Bontempi, 2016, [link](#).

<sup>23</sup> See Thom-Thysen et al., 2017, [link](#).

<sup>24</sup> Conversely, intangible assets would also be a contributing factor to low interest rates, because demand for credit would then be lower (CPB, 2022, [link](#)).

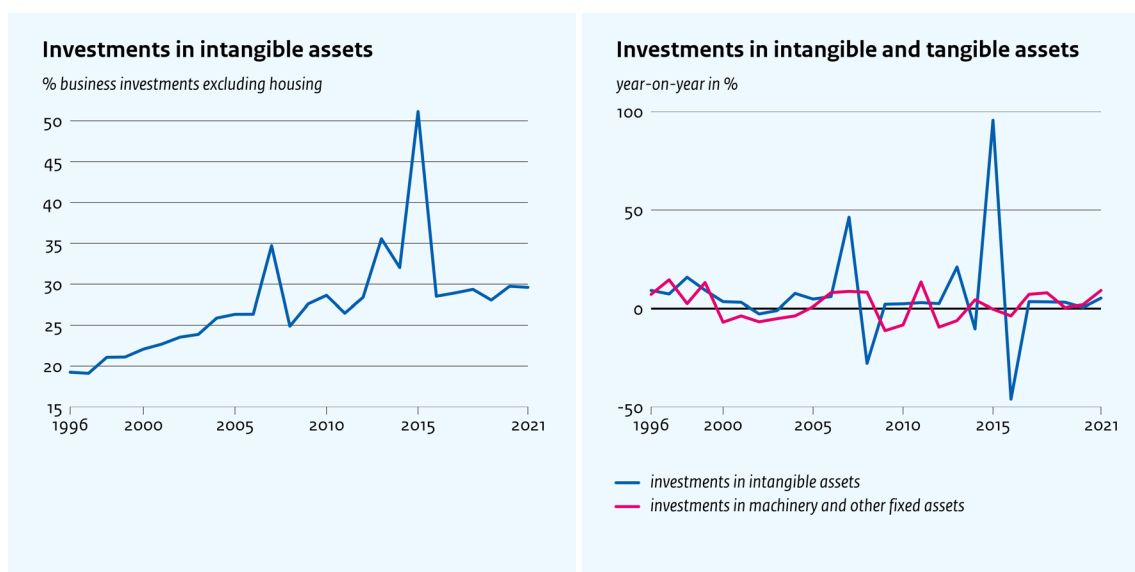
<sup>25</sup> Crouzet and Eberly, 2018, [link](#); Orhangazi, 2018, [link](#).

<sup>26</sup> Haskel and Westlake, 2018, [link](#).

<sup>27</sup> See EC, 2016, [link](#).

<sup>28</sup> In the updated Saffier 3.0, the estimated accelerator (the effect of current GDP growth on investment growth) is also smaller than in the previous model.

**Figure 4.2 Investments in intangible assets are increasing, and so too is volatility**



Source: Statistics Netherlands ([link](#))

**A lot more has therefore changed in the field of investments than the falling lines in Figure 4.1 suggest**  
The growth in intangible assets may (partially) explain this, but it also leads to a different economic dynamic in which returns on investments are distributed more unevenly between businesses and the social benefits differ between the various types of investments. The answer to the question of whether we still understand investments requires further thought and understanding of the effect of intangible assets.